What is claimed is:

1. An air/fuel-air mixture control device comprising;

an air valve for controlling air flow rate provided in an air passage, the air valve opens and closes the air passage based on the angular reciprocal movements of its valve body;

an output-controlling throttle valve incorporated in a fuel-air mixture passage provided in a carburetor, the throttle valve opens and closes the fuel-air mixture passage based on the linear reciprocal movements of its valve body; and

an interlocking mechanism interlocking the air valve with the throttle valve and a flow-rate controlling mechanism for fuel to be sent into the fuel-air mixture passage; the interlocking mechanism translates rotational movement of the air valve into linear movement of the throttle valve to open and close the air valve and throttle valve in relation to one another in response to accelerator operations.

2. The control device of claim 1 wherein the interlocking mechanism comprises a drive member secured to the air valve, a cam provided in the drive member, and a slave member secured to the throttle valve and operably coupled to the cam, the slave member goes through linear reciprocal movements by following the cam.

3. The control device of claim 1 wherein the fuel flow-rate controlling mechanism comprises a metering needle and a metering window

provided in a fuel passage leading from a constant fuel chamber to the fuel-air mixture passage, wherein the metering needle varies an opening area of the metering window in relation to the opening and closing of the throttle valve.

4. The control device of claim 2 further comprising a spring for keeping the slave member in constant contact with a cam surface of the cam.

5. The control device of claim 4 wherein the slave member comprises , a rotation-prevention mechanism that prevents the slave member and the throttle valve from rotating.

6. The control device of claim 4, wherein the cam surface faces away from the air valve, and wherein a spring applies a force to the slave member in the throttle valve closing direction, keeping the slave member in constant contact with the cam surface.

7. The control device of claim 4, wherein the cam surface faces toward the air valve, and wherein the spring applies a force to the slave member in the throttle valve opening direction, keeping the slave member in constant contact with the cam surface.

8. The control device of claim 2, including a helical coil spring, which keeps the slave member in constant contact with a cam surface of the cam and constantly presses the throttle valve to one side.

9. The control device of claim 1, wherein the throttle valve has a cylindrical body with a grooved passage on its periphery, and is

positioned to completely close the fuel-air mixture passage during idling, allowing the air required for idling to flow through the grooved passage.

10. The control device of claim 1, wherein the throttle valve has a flat plate body having an opening, and is positioned to completely close the fuel-air mixture passage during idling, allowing the air required for idling to flow through the opening.

11. The control device of claim 1, wherein the fuel-air mixture passage in an area of the throttle valve, has an elliptical shape whose minor axis is in the direction of the linear reciprocal movements of the throttle valve and whose major axis is in the direction perpendicular to the minor axis.

12. The control device of claim 1, wherein the fuel passage has a main jet, a metering cylinder having a metering window and positioned downstream from the main jet at least partially within a supply chamber, and a supply passage connecting the supply chamber with the fuel-air mixture passage on a downstream side of the throttle valve, and wherein the metering needle is inserted into the metering cylinder to vary the opening area of the metering window.

13. The control device of claim 12, wherein an air bleed passage is connected to the supply chamber.

14. The control device of claim 1, wherein the fuel passage comprises a main jet and a fuel nozzle positioned downstream from the main jet with its tip protruding into the fuel-air mixture passage and a metering window

on the side of its tip, wherein the metering needle is inserted into the fuel nozzle to vary the opening area of the metering window, and wherein the opening of the throttle valve is a depression that, in the idling position, surrounds the tip of the fuel nozzle while leaving a gap for allowing the air required for idling to pass through.

15. A carburetor system comprising;

an air passage,

an air valve rotatably positioned within the air passage, the air valve rotates to open and close the air passage;

a fuel-air mixture passage,

a throttle valve incorporated in the fuel-air mixture passage, the throttle valve opens and closes the fuel-air mixture with linear reciprocal movements;

an interlocking mechanism coupled to the air valve and the throttle valve, the interlocking mechanism translates rotational movement of the air valve into linear movement of the throttle valve to open and close the air valve and throttle valve in relation to one another; and

a fuel flow-rate controlling mechanism coupled to the interlocking mechanism.

16. The carburetor system of claim 15 wherein the interlocking mechanism comprises a cam secured to the air valve and a slave member secured to the throttle valve and operably coupled to the cam,

the slave member goes through linear reciprocal movements by following the cam.

17. The carburetor system of claim 15 wherein the fuel flow-rate controlling mechanism comprises a metering needle and a metering window provided in a fuel passage leading from a constant fuel chamber to the fuel-air mixture passage, wherein the metering needle varies the opening of the metering window in relation to the opening and closing of the throttle valve.

18. The carburetor system of claim 16 further comprising a spring for keeping the slave member in constant contact with a cam surface of the cam.

19. The carburetor system of claim 18 wherein the slave member comprises a rotation-prevention mechanism that prevents the slave member and the throttle valve from rotating.

20. The carburetor system of claim 18, wherein the cam surface faces away from the air valve, and wherein a spring applies a force to the slave member in the throttle valve closing direction, keeping the slave member in constant contact with the cam surface.

21. The carburetor system of claim 18, wherein the cam surface faces toward the air valve, and wherein the spring applies a force to the slave member in the throttle valve opening direction, keeping the slave member in constant contact with the cam surface.

22. The carburetor system of claim 15, wherein the throttle valve has a cylindrical body with a grooved passage on its periphery, and is positioned to completely close the fuel-air mixture passage during idling, allowing the air required for idling to flow through the grooved passage.

23. The carburetor system of claim 15, wherein the throttle valve has a flat plate body having an opening, and is positioned to completely close the fuel-air mixture passage during idling, allowing the air required for idling to flow through the opening.

24. The carburetor system of claim 15, wherein the fuel-air mixture passage in an area of the throttle valve, has an elliptical shape whose minor axis is in the direction of the linear reciprocal movements of the throttle valve and whose major axis is in the direction perpendicular to the minor axis.

25. The carburetor system of claim 15, wherein the fuel passage has a main jet, a metering cylinder having a metering window and positioned downstream from the main jet at least partially within a supply chamber, and a supply passage connecting the supply chamber with the fuel-air mixture passage on a downstream side of the throttle valve, and wherein the metering needle is inserted into the metering cylinder to vary the opening area of the metering window.

26. The carburetor system of claim 25, wherein an air bleed passage is connected to the supply chamber.

27. The carburetor system of claim 15, wherein the fuel passage comprises a main jet and a fuel nozzle positioned downstream from the main jet with its tip protruding into the fuel-air mixture passage and a metering window on the side of its tip, wherein the metering needle is inserted into the fuel nozzle to vary the opening area of the metering window, and wherein the opening of the throttle valve is a depression that, in the idling position, surrounds the tip of the fuel nozzle while leaving a gap for allowing the air required for idling to pass through.